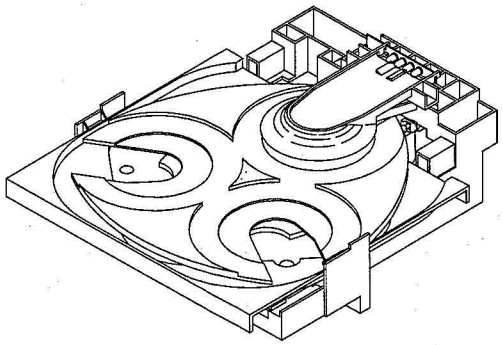
aiwa

aiwa SERVICE

VIDE-V22059

4ZG-1Z3
4ZG-1Z4

SERVICE MANUAL



CD MECHANISM

• BASIC CD MECHANISM: KSM-2131BAM 3ZG-2 E1 KSM-2131FAM

• TYPE: English

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	—	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	—	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

- This Service Manual has various derivation.Derivation name is indicated by the Service Manual for each model.
- This Service Manual include modification parts both 09-983-249-3C1 and 09-983-249-3OT(OLD).

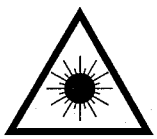
S/M Code No 09-983-249-30T

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstÂling ved Âbning, nÂr sikkerhedsafbrydere er ude af funktion. UndgÂ udsÊ ttelse for strÂling.

VAROITUS!

Laiteen K%ytt%aminen muulla kuin t%ss%ak%ytt^ ohjeessa mainitulla tavalla saattaa altistaa k%yt-t%j%a turvallisuusluokan 1 ylitt%av%alle n%akym%tt^ m%alle lasers%teilylle.

VARNING!

Om apparaten anv%ands pÂ annat s%tt %a vad som specificeras i denna bruksanvising, kan anv%andaren uts%ttas f^ r osynling laserstrÂlning, som ^ verskrider gr%asen f^ r laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

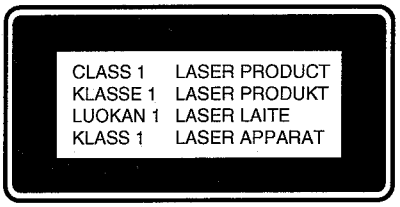
ATTENTION

L?utilisation de commandes, rÈglages ou procÈdures autres que ceux spÈcifiÈs peut entraÓner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstÂling ved Âbning, nÂr sikkerhedsafbrydereer ude af funktion. UndgÂ udsÊ ttelse for strÂling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

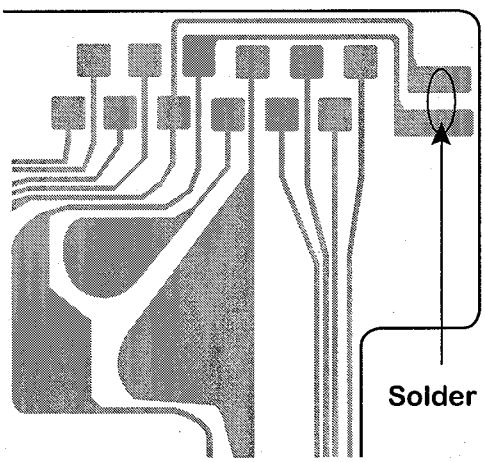


Precaution to replace Optical block (KSS-213B/213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

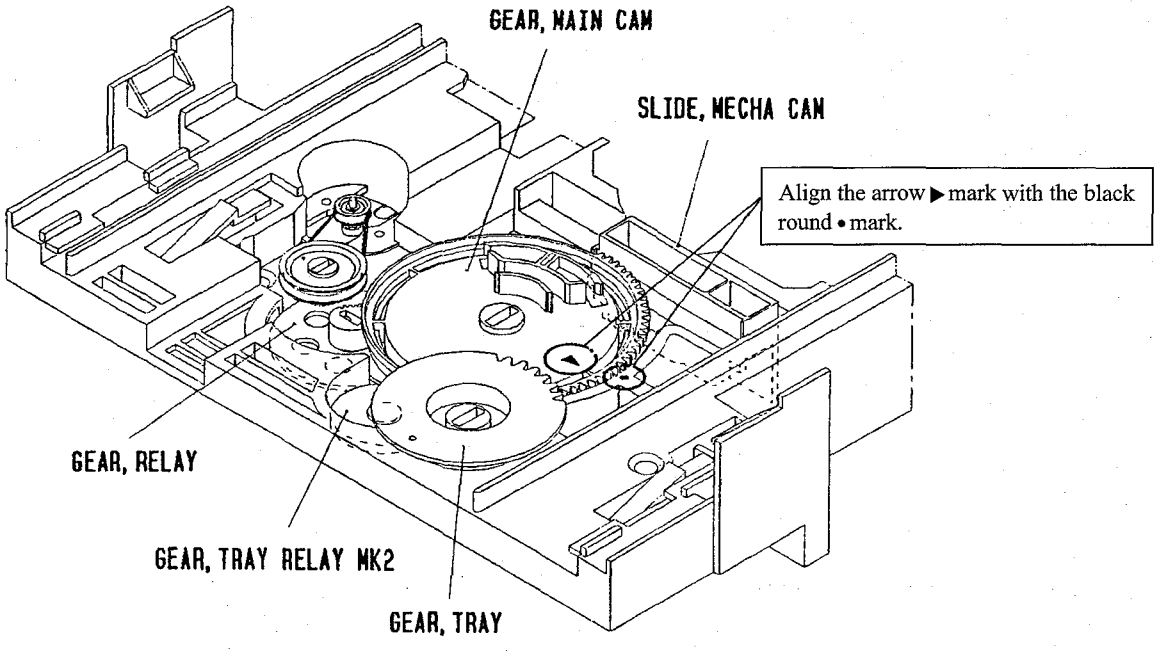
PICK-UP Assy P.W.B



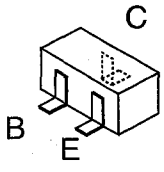
How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

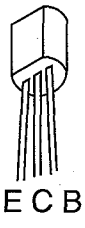
Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



TRANSISTOR ILLUSTRATION



2SA1235
2SC3052
DTC144TK
RT1N141C



2SA1318
2SD655
KTA1266

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1Z3 DSH

SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1Z3 (THE 3rd SANYO IC MODEL)
4ZG-1Z4 (THE 4th SANYO IC MODEL)

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	—	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	—	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

DERIVATION NAME

D: Digital output function
DL: Digital output function (CD WINDOW Flash function LOW END Type)
MD: Digital output for Mini Disc
SH: Pick up equipped with shutter

MODEL NO. 4ZG-1Z3 (D)

ELECTRICAL MAIN PARTS LIST

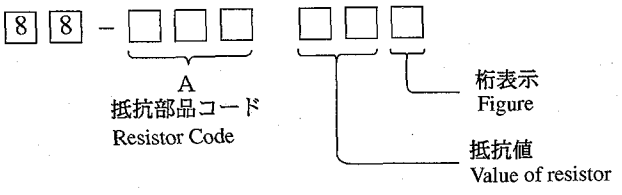
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010		C-IC,LA9241ML
	87-A20-459-010		C-IC,LC78622ED
	87-A20-445-010		IC,BA5936
TRANSISTOR			
	89-113-187-080		TR,2SA1318TU
	87-026-295-080		C-TR,DTC144TK
	87-A30-076-080		C-TR,2SC3052F
	89-406-554-580		TR,2SD655DE
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-075-080		C-TR,2SA1235F
DIODE			
	87-002-564-080		DIODE,1SS133-RA
3CD C.B			
	84-ZG1-244-210		CABI,OPTICAL
C11	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C12	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C13	87-016-369-080		C-CAP,S 0.033-25 K B
C14	87-A10-201-080		C-CAP,S 0.33-16 K B
C15	87-010-590-080		C-CAP,S 0.015-16 K R
C16	87-016-369-080		C-CAP,S 0.033-25 K B
C17	87-010-181-080		C-CAP,S 1800P-50 K B
C18	87-016-369-080		C-CAP,S 0.033-25 K B
C19	87-010-198-080		C-CAP,S 0.022-25 K B
C20	87-010-178-080		C-CAP,S 1000P-50 K B
C21	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C22	87-016-083-080		C-CAP,S 0.15-16 K R
C23	87-010-197-080		C-CAP,S 0.01-25 K B
C24	87-010-186-080		C-CAP,S 4700P-50 K B
C25	87-010-400-040		CAP,E 0.47-50 SME
C26	87-010-322-080		C-CAP,S 100P-50 J CH
C27	87-010-382-040		CAP,E 22-25 SME
C28	87-010-403-040		CAP,E 3.3-50 SME
C29	87-010-184-080		C-CAP,S 3300P-50 K B
C31	87-010-186-080		C-CAP,S 4700P-50 K B
C32	87-010-152-080		C-CAP,S 8P
C33	87-016-081-080		C-CAP,S 0.1-16 K R
C35	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C37	87-010-405-080		CAP,E 10-50 M SME
C38	87-010-263-080		CAP,E 100-10 SME
C39	87-010-189-020		C-CAP,S 8200P-50 K B
C40	87-010-401-080		CAP,E 1-50 M SME
C41	87-016-081-080		C-CAP,S 0.1-16 RK
C42	87-010-263-080		CAP,E 100-10 SME
C43	87-010-197-080		C-CAP,S 0.01-25 K B
C44	87-010-263-080		CAP,E 100-10 SME
C46	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C47	87-010-260-080		CAP,E 47-25 SME
C48	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C49	87-010-404-080		CAP,E 4.7-50 M SME
C50	87-010-197-080		C-CAP,S 0.01-25 K B
C51	87-010-263-040		CAP,E 100-10 M SME
C52	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C101	87-016-081-080		C-CAP,S 0.1-16 K R
C102	87-016-081-080		C-CAP,S 0.1-16 K R
C103	87-010-321-080		C-CAP,S 82P-50 J CH
C104	87-012-154-080		C-CAP,S 150P-50 J CH GRM
C105	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C109	87-010-197-080		C-CAP,S 0.01-25 K B
C111	87-010-312-080		C-CAP,S 15P
C112	87-010-154-080		C-CAP,S 10P-50 D CH
C113	87-010-322-080		C-CAP,S 100P-50 J CH
C115	87-010-404-080		CAP,E 4.7-50 M SME
C116	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C117	87-010-263-040		CAP,E 100-10 M SME
C118	87-010-178-080		C-CAP,S 1000P-50 K B
C119	87-010-154-080		C-CAP,S 10P-50 D CH
C120	87-018-209-080		CAP, CER 0.1-50V
C121	87-010-403-080		CAP,E 3.3-50 M SME
C122	87-010-403-080		CAP,E 3.3-50 M SME
C123	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C124	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C131	87-010-382-080		CAP,E 22-25 M SME
C191	87-010-263-040		CAP,E 100-10 M SME
C301	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C302	87-010-382-080		CAP,E 22-25 M SME
C303	87-010-260-080		CAP,E 47-25 SME
C501	87-010-381-080		CAP,E 1000-16 SMG
C502	87-010-197-080		C-CAP,S 0.01-25 K B
C504	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C505	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C506	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C507	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C509	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C603	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C610	87-010-405-080		CAP,E 10-50 M SME
C611	87-010-405-080		CAP,E 10-50 M SME
C701	87-010-405-080		CAP,E 10-50 M SME
C705	87-010-197-080		C-CAP,S 0.01-25 K B
C706	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C711	87-010-322-080		C-CAP,S 100P-50 J CH
C712	87-010-322-080		C-CAP,S 100P-50 J CH
C713	87-010-322-080		C-CAP,S 100P-50 J CH
C901	87-010-260-080		CAP,E 47-25 SME
C902	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
CON3	84-ZG1-648-010		CONN ASSY,6P
FC1	85-NFT-611-110		FF-CABLE 16P-1.0
FC4	84-ZG1-614-210		F-CABLE,5P 1.25 210MM
L11	87-005-602-080		COIL,10UH J LAV35
L101	87-005-614-080		COIL,100UH
L102	87-005-602-080		COIL,10UH J LAV35
LED901	87-A40-123-010		LED,SLZ-8128A-01-B
M601	87-045-305-010		MOT,RF-500TB
SFR101	87-024-437-080		SFR100K,RH063EC
SW701	87-036-109-010		SW,MICRO SPPB61
SW702	87-036-109-010		SW,MICRO SPPB61
X101	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-A40-316-080		LED,SLR-56PCT31 GRN
LED702	87-A40-268-080		LED,SLH-56DCT31 ORN
LED703	87-A40-268-080		LED,SLH-56DCT31 ORN
LED704	87-A40-316-080		LED,SLR-56PCT31 GRN
T-T C.B			
C401	87-018-214-080		CAP,TC U 0.1-50 Z F SA
M401	87-045-364-010		MOT,BCH3B
PS401	87-026-573-010		SNSR,PHOTO GP1S53
MOTOR C.B			
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

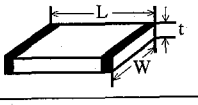
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



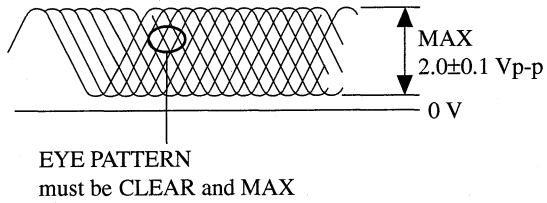
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

WAVE FORM

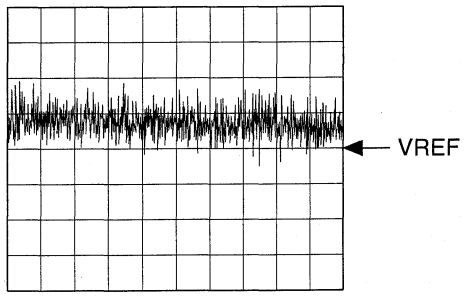
① IC11 Pin ㊶ (RFSM)

VOLT/DIV: 0.5V
TIME/DIV: 1μS



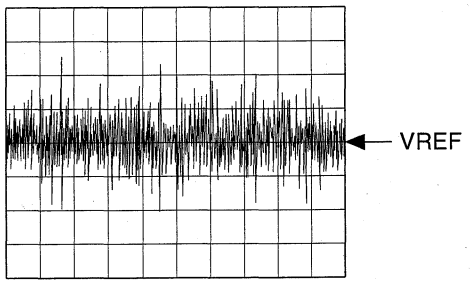
② IC11 Pin ⑯ (FD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



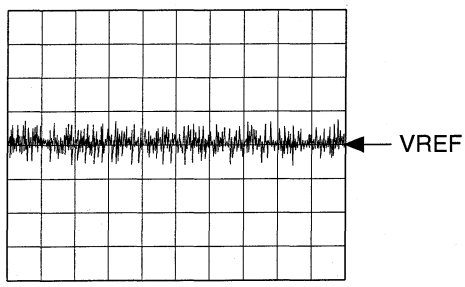
③ IC11 Pin ⑮ (TO)

VOLT/DIV:100mV
TIME/DIV: 1mS



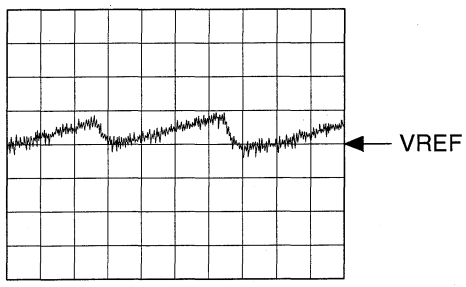
④ IC11 Pin ㉗ (SPD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



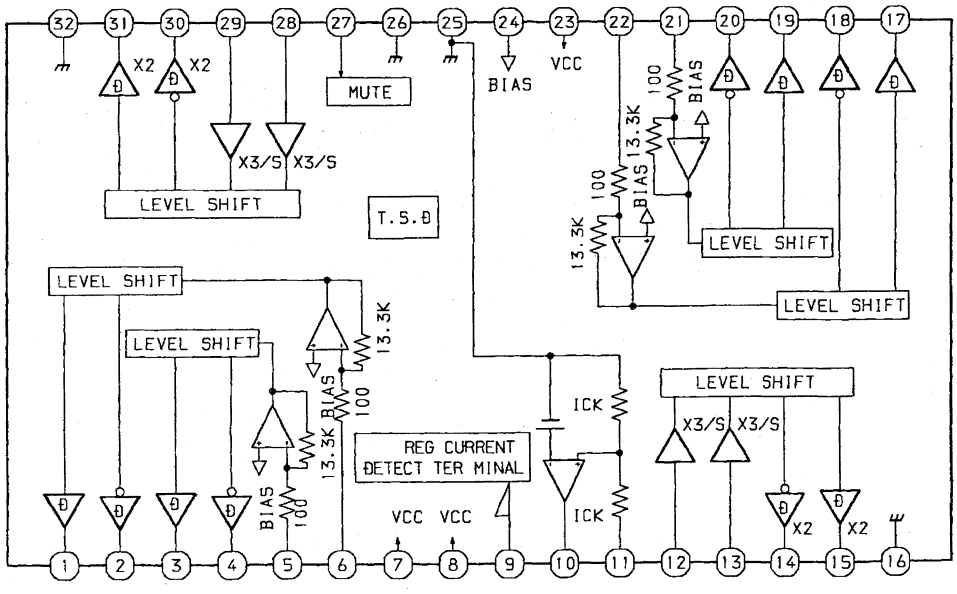
⑤ IC11 Pin ㉙ (SLD)

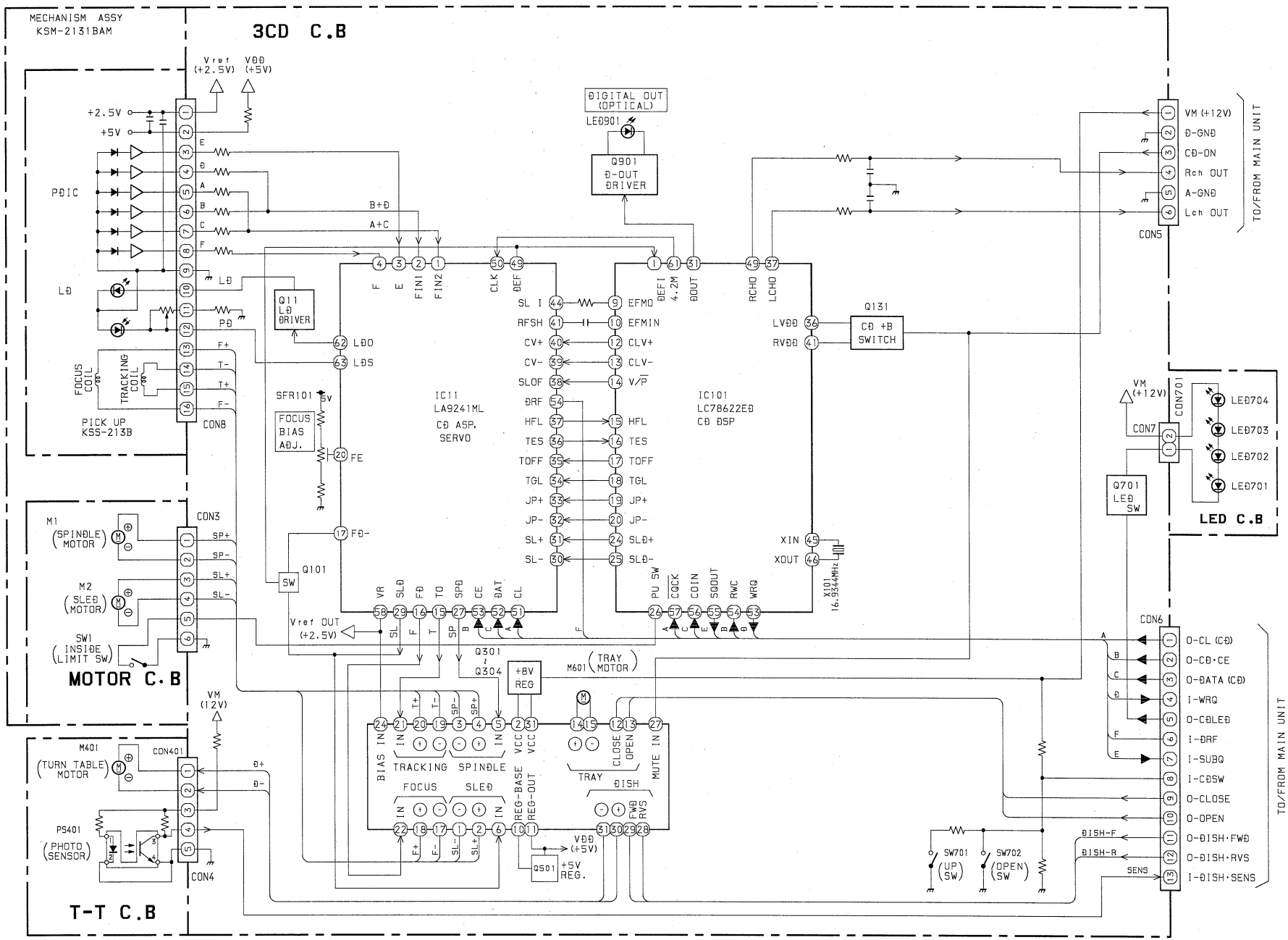
VOLT/DIV: 200mV
TIME/DIV: 2S

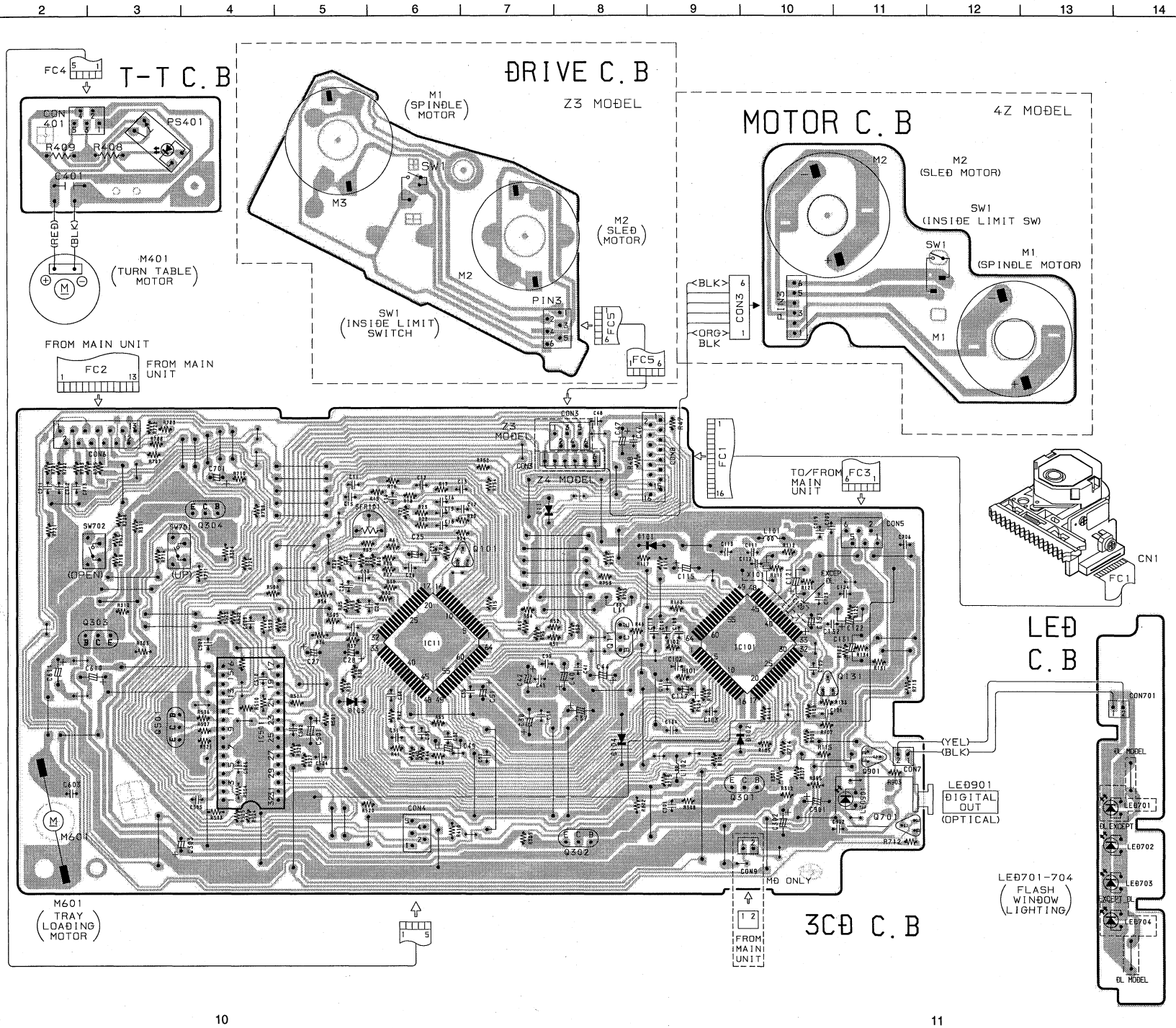


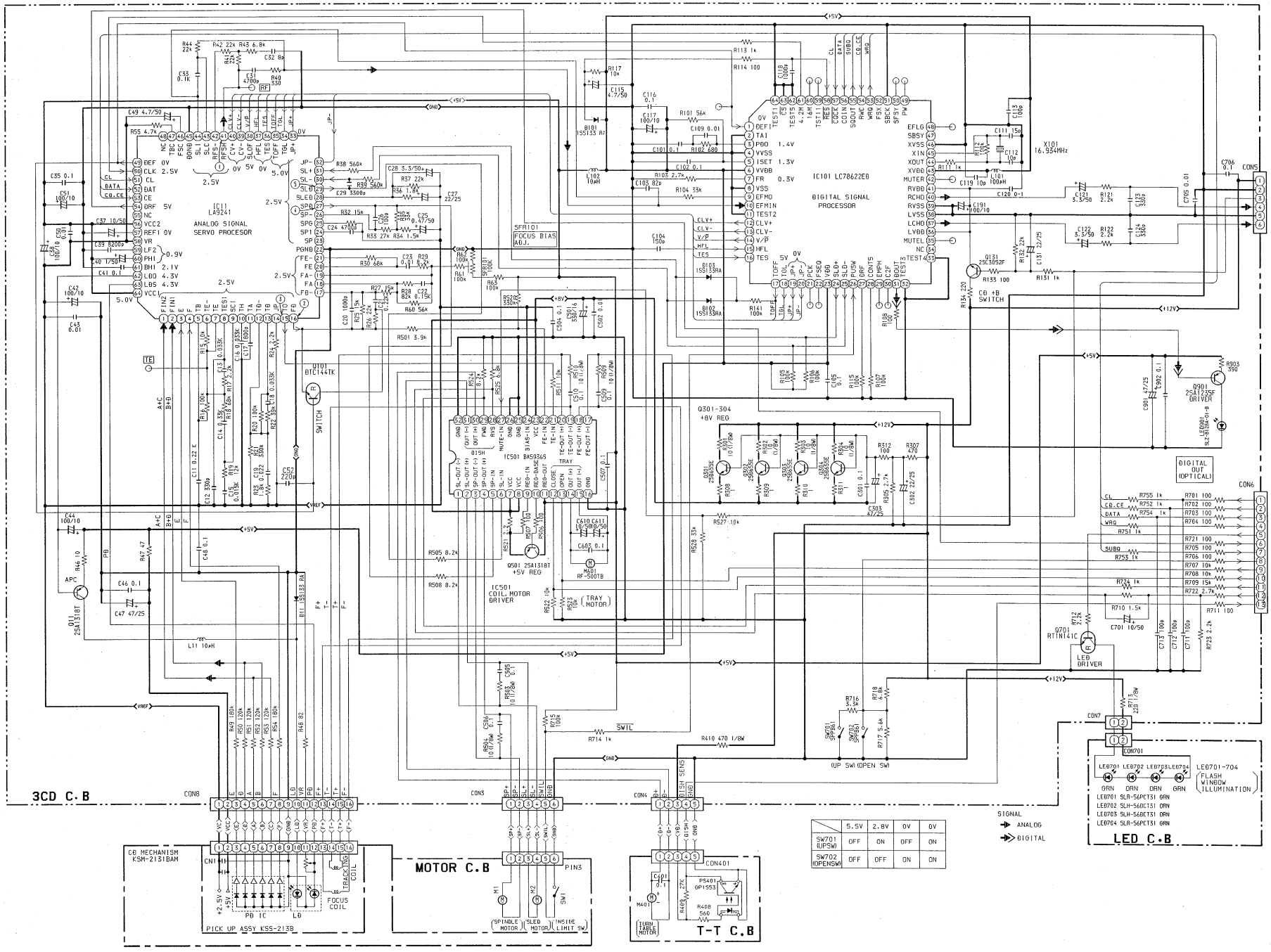
IC BLOCK DIAGRAM

IC, BA5936




MECHANISM ASSY
KSM-2131BAM
3CD C.B
PICK UP
KSS-213B
CON8
MOTOR C.B
CON3
M1
(SPINDLE MOTOR)
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
T-T C.B
CON401
M401
(TURN TABLE MOTOR)
PS401
(PHOTO SENSOR)
CON4
IC11
LA9241ML
CD ASP, SERVO
IC101
LC78622ED
CD DSP
DIGITAL OUT
(OPTICAL)
LED901
Q901
D-OUT
DRIVER
Q11
LD
DRIVER
Q131
CD +B
SWITCH
SFR101
FOCUS
BIAS
ADJ.
Q101
SW
Q301
~
Q304
+8V
REG
Q501
+5V
REG.
M601
(TRAY MOTOR)
TRACKING
SPINDLE
FOCUS
SLED
TRAY
DISH
SW701
(UP SW)
SW702
(OPEN SW)
X101
16.9344MHz
CON5
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
TO/FROM MAIN UNIT
CON701
CON7
LED704
LED703
LED702
LED701
LED C.B
Q701
LED
SW
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-DRF
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
TO/FROM MAIN UNIT


T-T C.B
FC4
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
DRIVE C.B
Z3 MODEL
M1
(SPINDLE MOTOR)
SW1
M3
M2
(SLED MOTOR)
M2
PIN3
SW1
(INSIDE LIMIT SWITCH)
FC5
MOTOR C.B
4Z MODEL
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
M1
(SPINDLE MOTOR)
<BLK>
<ORG>
BLK
CON3
FROM MAIN UNIT
FC2
FROM MAIN UNIT
FC1
TO/FROM MAIN UNIT
FC3
CN1
Z3 MODEL
Z4 MODEL
SW702
(OPEN)
(UP)
Q304
Q303
Q302
Q301
M601
M601
(TRAY LOADING MOTOR)
FROM MAIN UNIT
MD ONLY
3CD C.B
LED
C.B
(YEL)
(BLK)
LED901
DIGITAL OUT
(OPTICAL)
CON701
LED701
LED702
LED703
LED704
LED701-704
(FLASH WINDOW LIGHTING)



	5.5V	2.8V	0V	0V
SW701 (UP SW)	OFF	ON	OFF	ON
SW702 (OPEN SW)	OFF	OFF	ON	ON

IC, LA9241M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES "Track Error Sense" comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	"High Frequency Level" is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	"Slice Level Control" is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	"Tracking Balance Control" EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	"Detect RF" RF level detector output.
55	FSS	I	"Focus Search Select" focus search mode (± search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78622E

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLV–	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP–	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24-28	SL+ - PUIN	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	$\overline{\text{RES}}$	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

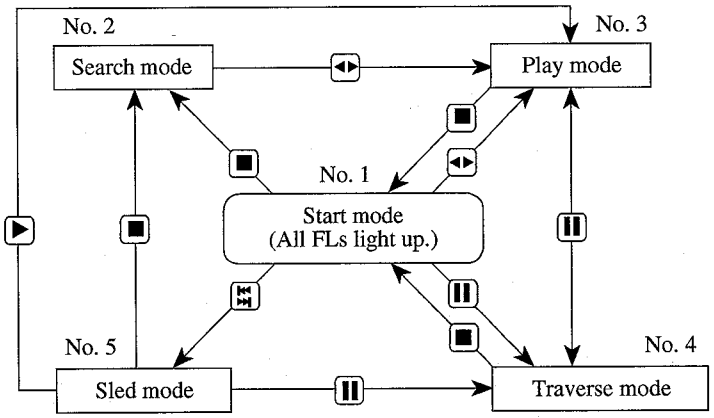
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■key		• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	⏸ key		• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

*NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

*NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ⏸ status is active. If they are pressed, playback will not be possible after the ⏸ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ⏸ status, press the ■ key and return to the start mode (No.1).

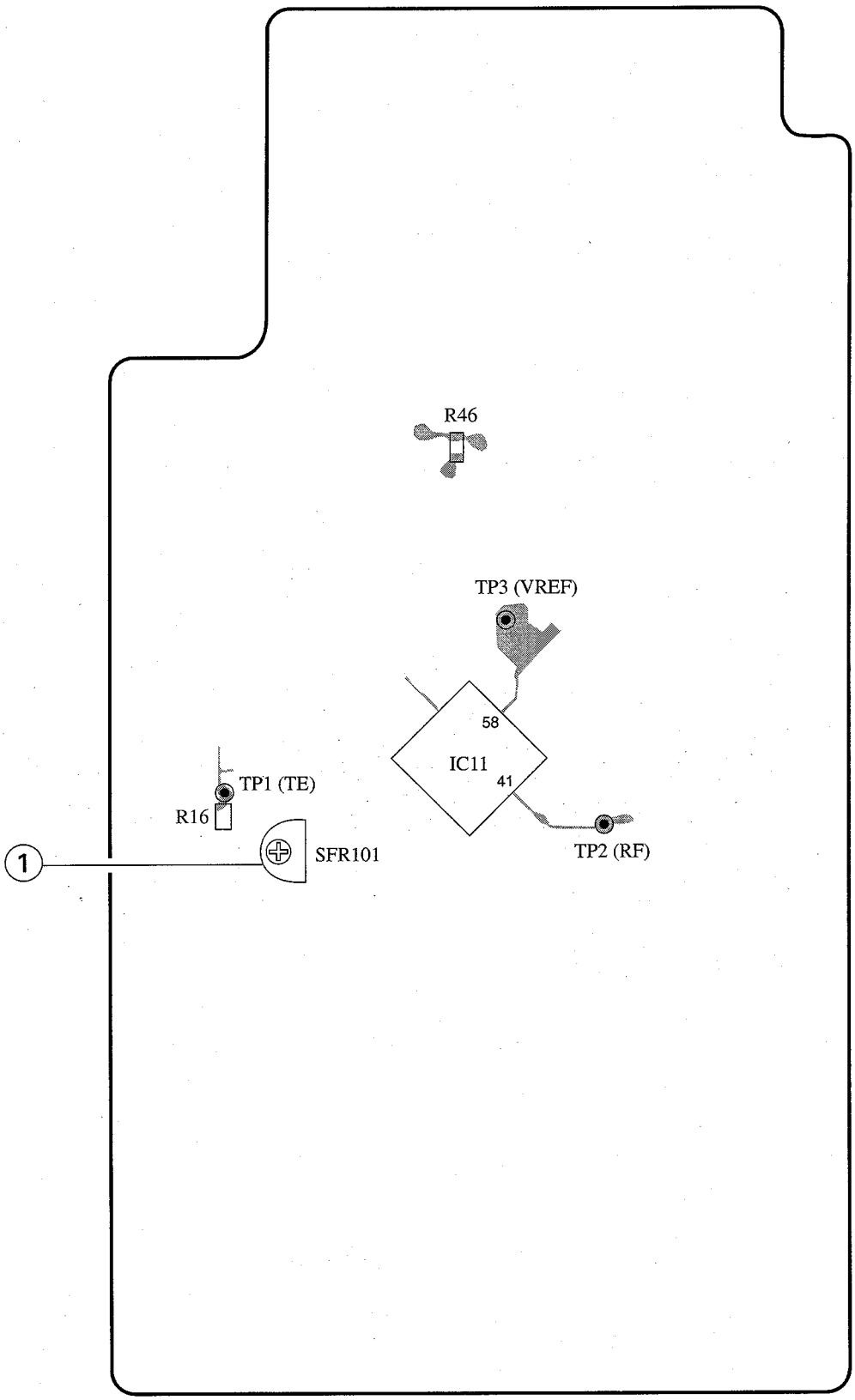
*NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the fi or fl keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



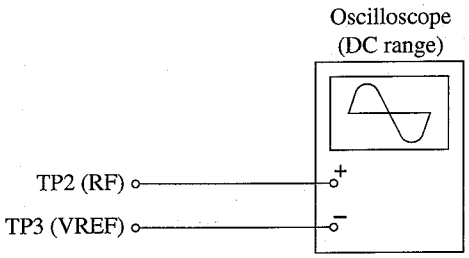
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

3CD C.B (PATTERN SIDE)

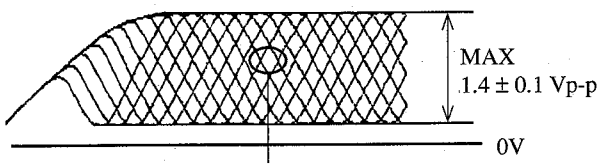


Note: ● Connect a probe (10: 1) of the oscilloscope test point for adjustment.
● Connect ground (⊖) terminal of oscilloscope probe to TP3 (VREF) for all adjustment.

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.



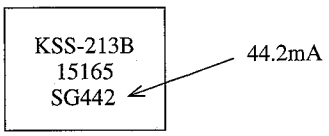
1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR101 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX

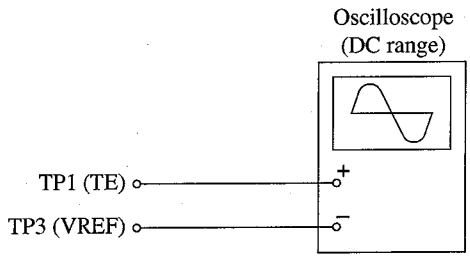
VOLT/DIV: 0.5V
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

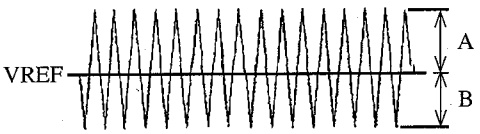


$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check



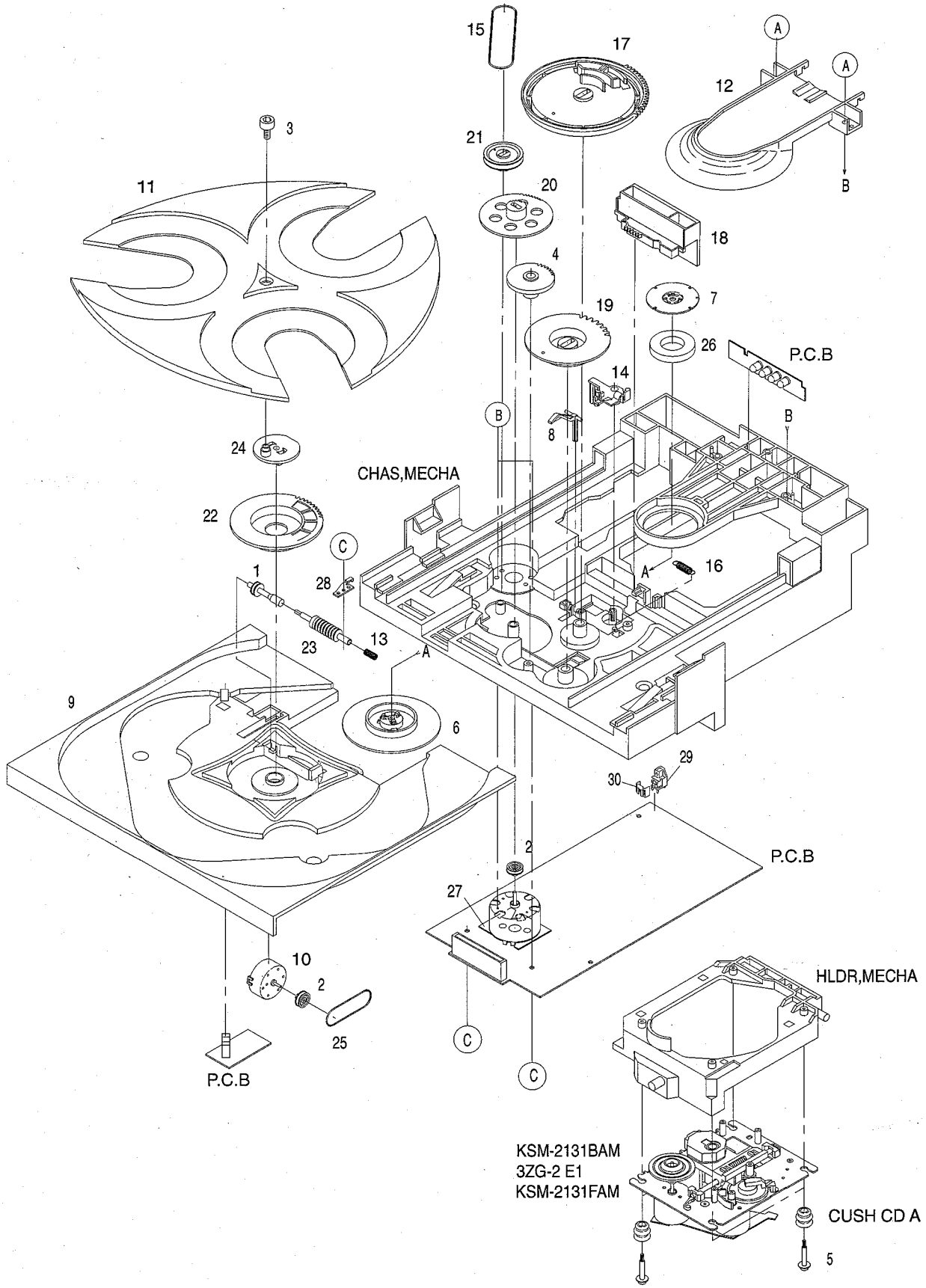
1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782 (YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1/1

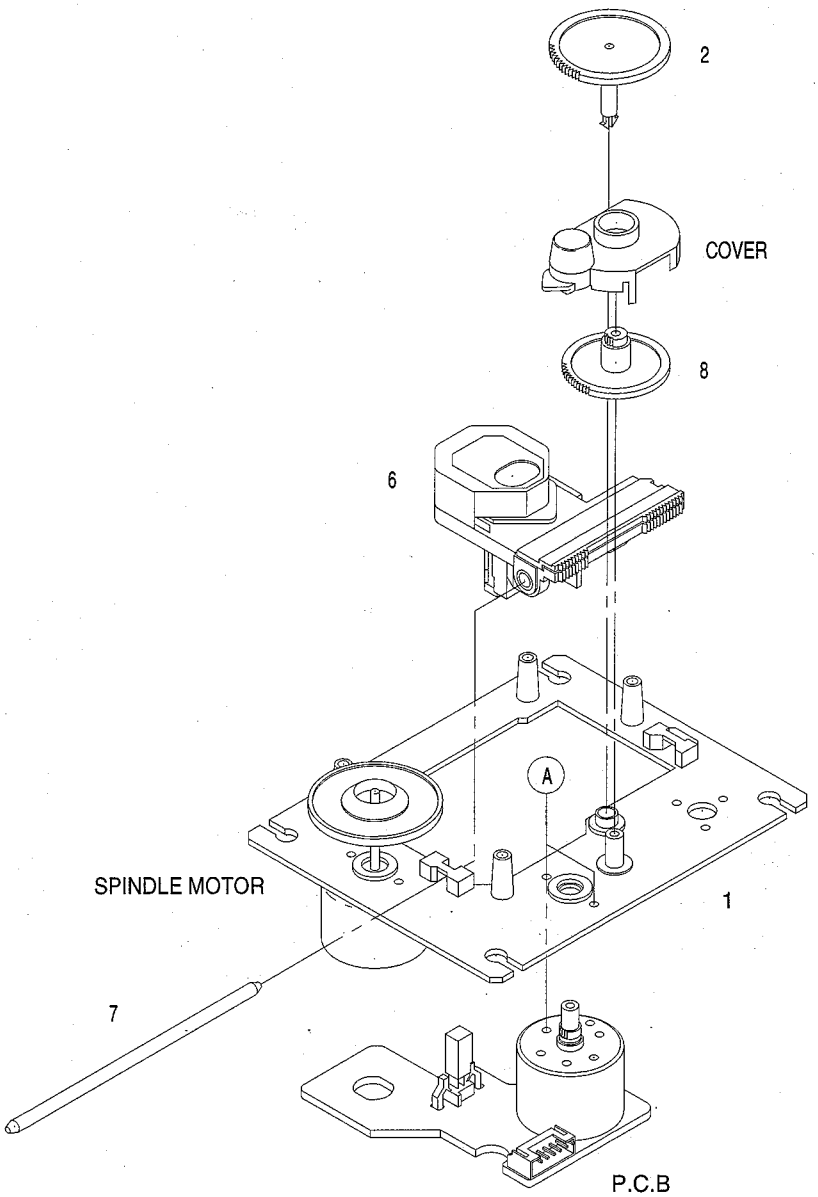


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210		PULLY,WORM N
2	81-ZG1-212-010		PULLY,LOAD MO
3	81-ZG1-239-010		S-SCREW,TT
4	81-ZG1-291-110		GEAR,TRAY RELAY NO3
5	81-ZG1-271-010		S-SCREW MECH REAR
6	81-ZG1-277-310		HLDR,MAGNET N
7	81-ZG1-255-110		PLATE,MAGNET MK2
8	83-ZG3-213-010		LVR,SW
9	84-ZG1-003-310		TRAY,NO2-B
10	87-045-364-010		MOTOR(BCH3B14)
11	84-ZG1-005-210		TURNTABLE,NO1(*)
12	84-ZG1-011-010		REFLECTOR,CD
13	84-ZG1-248-010		SPR-C,WORM
14	84-ZG1-208-210		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-010		SPR-E CAM S
17	84-ZG1-215-410		GEAR,MAIN CAM BLU
18	84-ZG1-216-310		SLIDE,MECHA CAM YEL
19	84-ZG1-205-110		GEAR,TRAY
20	84-ZG1-206-110		GEAR,RELAY
21	84-ZG1-207-010		PULLEY,RELAY
22	84-ZG1-221-010		GEAR,MAIN TT
23	84-ZG1-238-010		GEAR,WORM N
24	84-ZG1-224-010		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	84-ZG1-268-010		MAGNET,CLAMPER 97<Z4>
26	83-ZG3-602-010		RING,MAG<Z3>
27	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
28	84-ZG1-259-010		SPR-P,WORM
29	84-ZG1-244-310		CABI,OPTICAL
30	84-ZG1-261-010		LID,OPTICAL
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-251-070-410		U+2.6-3
C	87-067-981-010		BVT2+3-6 BLK

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131BAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131BAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-587-110		MOTOR CHASSIS ASSY
2	92-626-907-010		GEAR(A)
6	98-848-379-310		OPTICAL PICK UP KSS-213B
7	92-626-908-010		SHAFT SLED
8	92-627-003-010		GEAR B
A	97-621-255-150		SCREW+P2-3

MODEL NO. 4ZG-1Z3/Z4 (D, DL, SH/D, DL, SH, MD)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010		C-IC,LA9241ML
	87-A20-459-010		C-IC,LC78622ED
	87-A20-445-010		IC,BA5936
TRANSISTOR			
	87-026-609-080		TR,KTA1266GR<DL>
	89-113-187-080		TR,2SA1318TU<D,4MD>
	87-026-295-080		C-TR,DTC144TK
	87-A30-076-080		C-TR,2SC3052F
	89-406-554-580		TR,2SD655DE
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-075-080		C-TR,2SA1235F
DIODE			
	87-002-564-080		DIODE,1SS133-RA
3CD C.B			
	84-ZG1-244-210		CABI,OPTICAL
C11	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C12	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C13	87-016-369-080		C-CAP,S 0.033-25 K B
C14	87-A10-201-080		C-CAP,S 0.33-16 K B
C15	87-010-590-080		C-CAP,S 0.015-16 K R
C16	87-016-083-080		C-CAP,S 0.15-16 RK
C17	87-010-184-080		CHIP CAPACITOR 3300P(K)
C18	87-016-083-080		C-CAP,S 0.15-16 RK
C19	87-010-198-080		C-CAP,S 0.022-25 K B
C20	87-010-178-080		C-CAP,S 1000P-50 K B
C21	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C22	87-016-083-080		C-CAP,S 0.15-16 K R
C23	87-010-197-080		C-CAP,S 0.01-25 K B
C24	87-010-186-080		C-CAP,S 4700P-50 K B
C25	87-010-400-040		CAP,E 0.47-50 SME
C26	87-010-322-080		C-CAP,S 100P-50 J CH
C27	87-010-382-040		CAP,E 22-25 SME
C28	87-010-545-040		CAP,E 0.22-50 SME
C29	87-010-184-080		C-CAP,S 3300P-50 K B
C30	87-010-145-080		C-CAP,S 1P-50 C CH GRM
C31	87-010-186-080		C-CAP,S 4700P-50 K B
C32	87-010-315-080		C-CAP,S 27P-50 CH
C33	87-016-081-080		C-CAP,S 0.1-16 K R
C35	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C37	87-010-405-080		CAP,E 10-50 M SME
C38	87-010-263-080		CAP,E 100-10 SME
C39	87-010-596-020		C-CAP,S 0.047-16 RK
C40	87-010-401-080		CAP,E 1-50 M SME
C41	87-010-805-080		CAP, S 1-16
C42	87-010-263-080		CAP,E 100-10 SME
C43	87-010-197-080		C-CAP,S 0.01-25 K B
C44	87-010-263-080		CAP,E 100-10 SME
C46	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C47	87-010-260-080		CAP,E 47-25 SME
C48	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C49	87-010-404-080		CAP,E 4.7-50 M SME
C50	87-010-197-080		C-CAP,S 0.01-25 K B
C51	87-010-263-040		CAP,E 100-10 M SME
C52	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C101	87-016-369-080		C-CAP,S 0.033-25 B K
C102	87-016-081-080		C-CAP,S 0.1-16 K R
C103	87-010-321-080		C-CAP,S 82P-50 J CH
C104	87-012-154-080		C-CAP,S 150P-50 J CH GRM
C105	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C109	87-010-197-080		C-CAP,S 0.01-25 K B
C111	87-010-312-080		C-CAP,S 15P
C112	87-010-154-080		C-CAP,S 10P-50 D CH
C113	87-010-322-080		C-CAP,S 100P-50 J CH
C115	87-010-404-080		CAP,E 4.7-50 M SME
C116	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C117	87-010-263-040		CAP,E 100-10 M SME
C118	87-010-178-080		C-CAP,S 1000P-50 K B
C119	87-010-154-080		C-CAP,S 10P-50 D CH
C120	87-018-209-080		CAP, CER 0.1-50V<D,4MD>
C121	87-010-403-080		CAP,E 3.3-50 M SME
C122	87-010-403-080		CAP,E 3.3-50 M SME
C123	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C124	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C131	87-010-382-080		CAP,E 22-25 M SME
C191	87-010-263-040		CAP,E 100-10 M SME
C301	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C302	87-010-382-080		CAP,E 22-25 M SME
C303	87-010-260-080		CAP,E 47-25 SME
C501	87-010-381-080		CAP,E 1000-16 SMG
C502	87-010-197-080		C-CAP,S 0.01-25 K B
C504	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C505	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C506	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C507	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C509	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C603	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C610	87-010-405-080		CAP,E 10-50 M SME
C611	87-010-405-080		CAP,E 10-50 M SME
C701	87-010-405-080		CAP,E 10-50 M SME
C705	87-010-197-080		C-CAP,S 0.01-25 K B
C706	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C711	87-010-322-080		C-CAP,S 100P-50 J CH
C712	87-010-322-080		C-CAP,S 100P-50 J CH
C713	87-010-322-080		C-CAP,S 100P-50 J CH
C901	87-010-260-080		CAP,E 47-25 SME
C902	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
CON3	84-ZG1-648-010		CONN ASSY,6P<D,4MD>
CON3	84-ZG1-675-010		CONN ASSY,6P (GETA)<Z4>
FC1	85-NFT-611-110		FF-CABLE 16P-1.0
FC4	84-ZG1-614-210		F-CABLE,5P 1.25 210MM<D,4MD>
FC4	84-ZG1-672-010		F-CABLE,5P 1.25 210MM WHITE N<DL>
FC5	84-ZG1-630-010		CABLE FFC 6P-1.25<Z3>
L11	87-005-602-080		COIL,10UH J LAV35
L101	87-005-614-080		COIL,100UH
L102	87-005-602-080		COIL,10UH J LAV35
LED901	87-A40-123-010		LED,SLZ-8128A-01-B
M601	87-045-305-010		MOT,RF-500TB
SFR101	87-A90-787-080		SFR,100K H HOKU<DL>
SFR101	87-024-437-080		SFR100K,RH063EC<D,4MD>
SW701	87-036-109-010		SW,MICRO SPPB61
SW702	87-036-109-010		SW,MICRO SPPB61
X101	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-A40-316-080		LED,SLR-56PCT31 GRN<D,4MD>
LED702	87-A40-268-080		LED,SLH-56DCT31 ORN<D,4MD>
LED702	87-A40-446-040		LED,SLP-7131F-81H-S-T1 P-GRN<DL>
LED703	87-A40-268-080		LED,SLH-56DCT31 ORN<D,4MD>
LED703	87-A40-447-040		LED,SLP-6130C-81H-S-T1 ORN<DL>
LED704	87-A40-316-080		LED,SLR-56PCT31 GRN<D,4MD>
T-T C.B			
C401	87-018-214-080		CAP,TC U 0.1-50 Z F SA
M401	87-045-364-010		MOT,BCH3B
PS401	87-026-573-010		SNSR,PHOTO GP1S53
MOTOR C.B<Z4>			

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
M2	91-669-930-110		SLED MOTOR ASSY<Z4>
PIN3	91-564-722-110		CONNECTOR 6P<Z4>
SW1	91-572-085-110		LEAF SW<Z4>

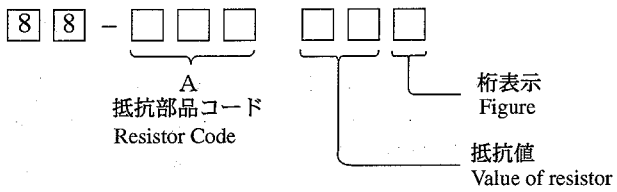
DRIVE C.B<Z3>

M1	87-045-358-010		MOT,RF-310TA 43<Z3>
M2	87-045-356-010		MOT,RF-310TA 30<Z3>
SW1	87-A90-042-010		SW,LEAF MSW-17310MVPO<Z3>

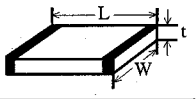
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

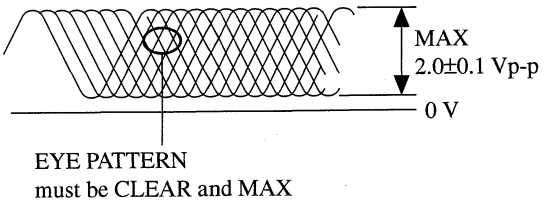
Refer to the following pages for the common section.

- IC BLOCK DIAGRAM ..... See page 7
- IC DESCRIPTION ..... See page 14
- TEST MODE ..... See page 18
- ELECTRICAL ADJUSTMENT ..... See page 19
- MECHANICAL EXPLODED VIEW 1/1 ..... See page 21
- MECHANICAL PARTS LIST 1/1 ..... See page 22

WAVE FORM

① IC11 Pin ㊶ (RFSM)

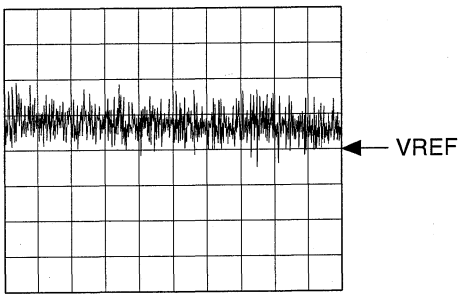
VOLT/DIV: 0.5V
TIME/DIV: 1μS



EYE PATTERN
must be CLEAR and MAX

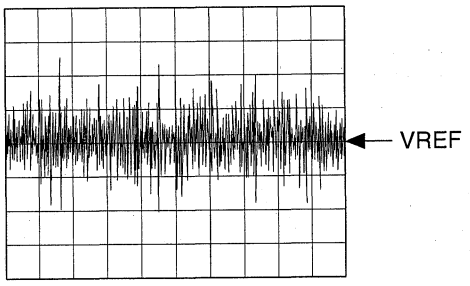
② IC11 Pin ⑯ (FD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



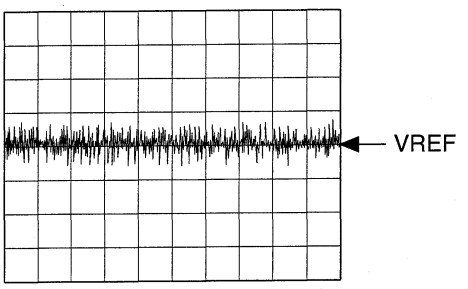
③ IC11 Pin ⑮ (TO)

VOLT/DIV:100mV
TIME/DIV: 1mS



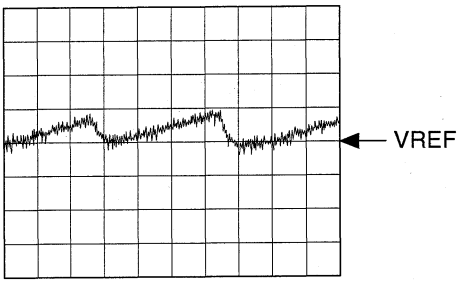
④ IC11 Pin ㉗ (SPD)

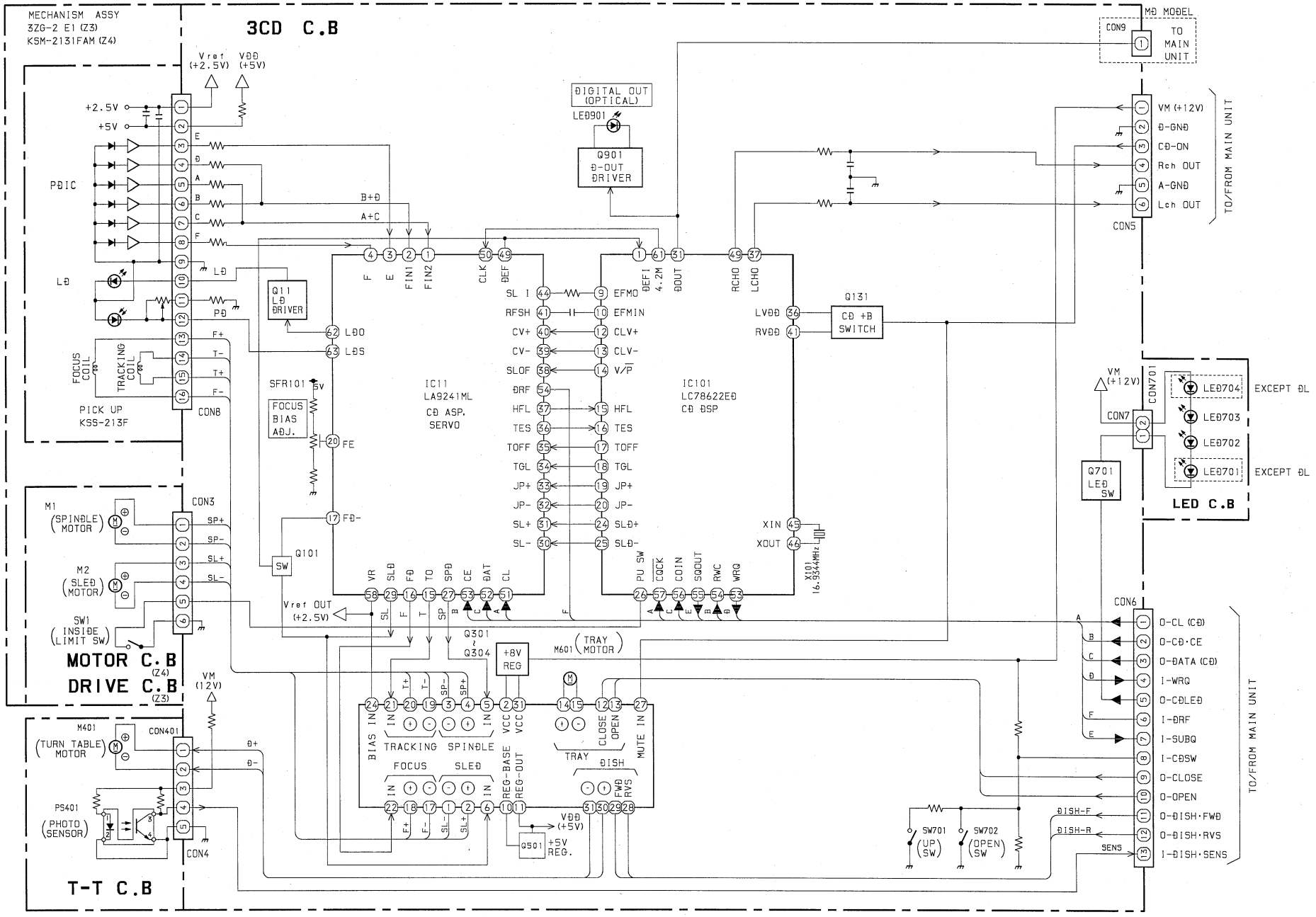
VOLT/DIV: 100mV
TIME/DIV: 1mS

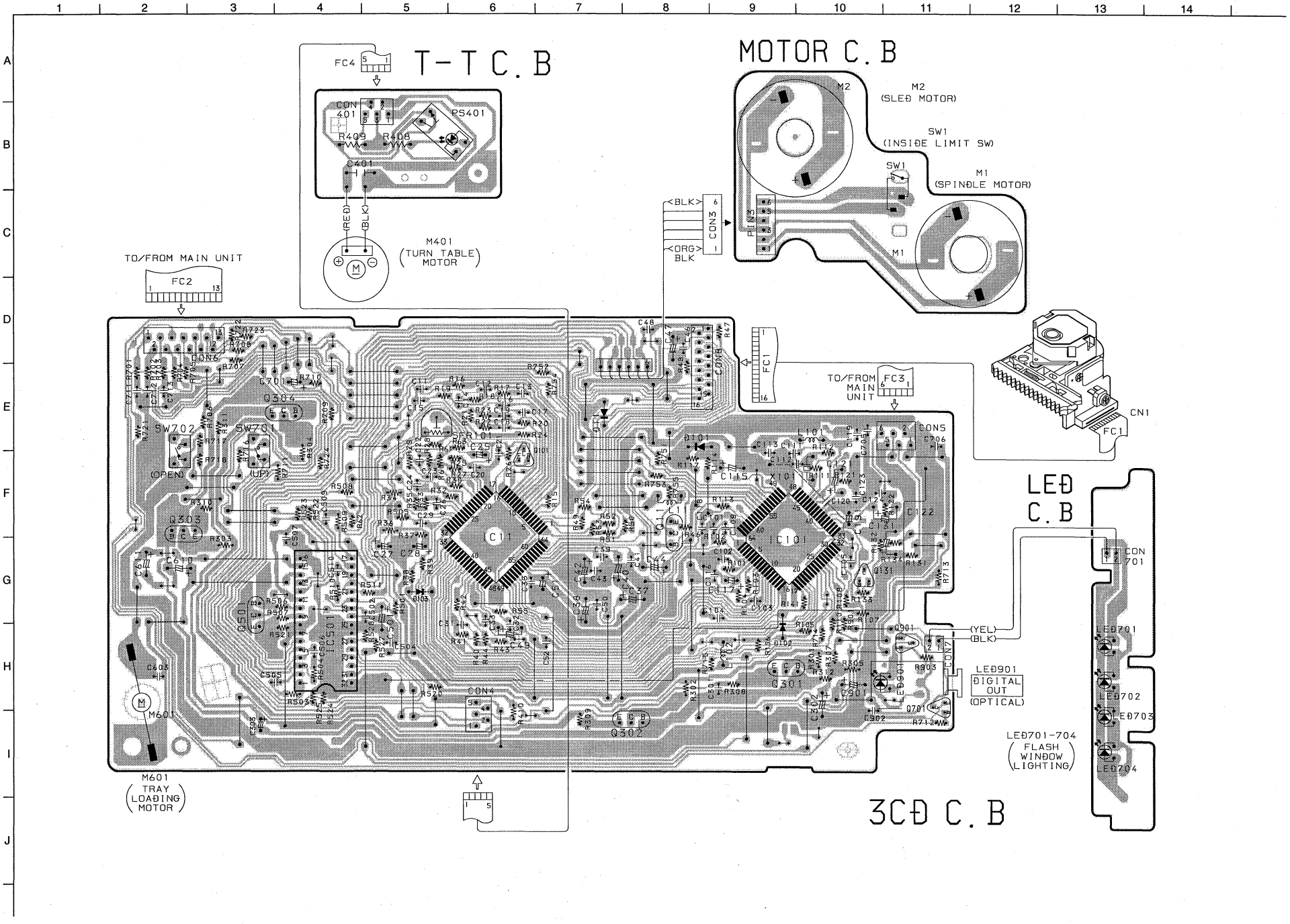


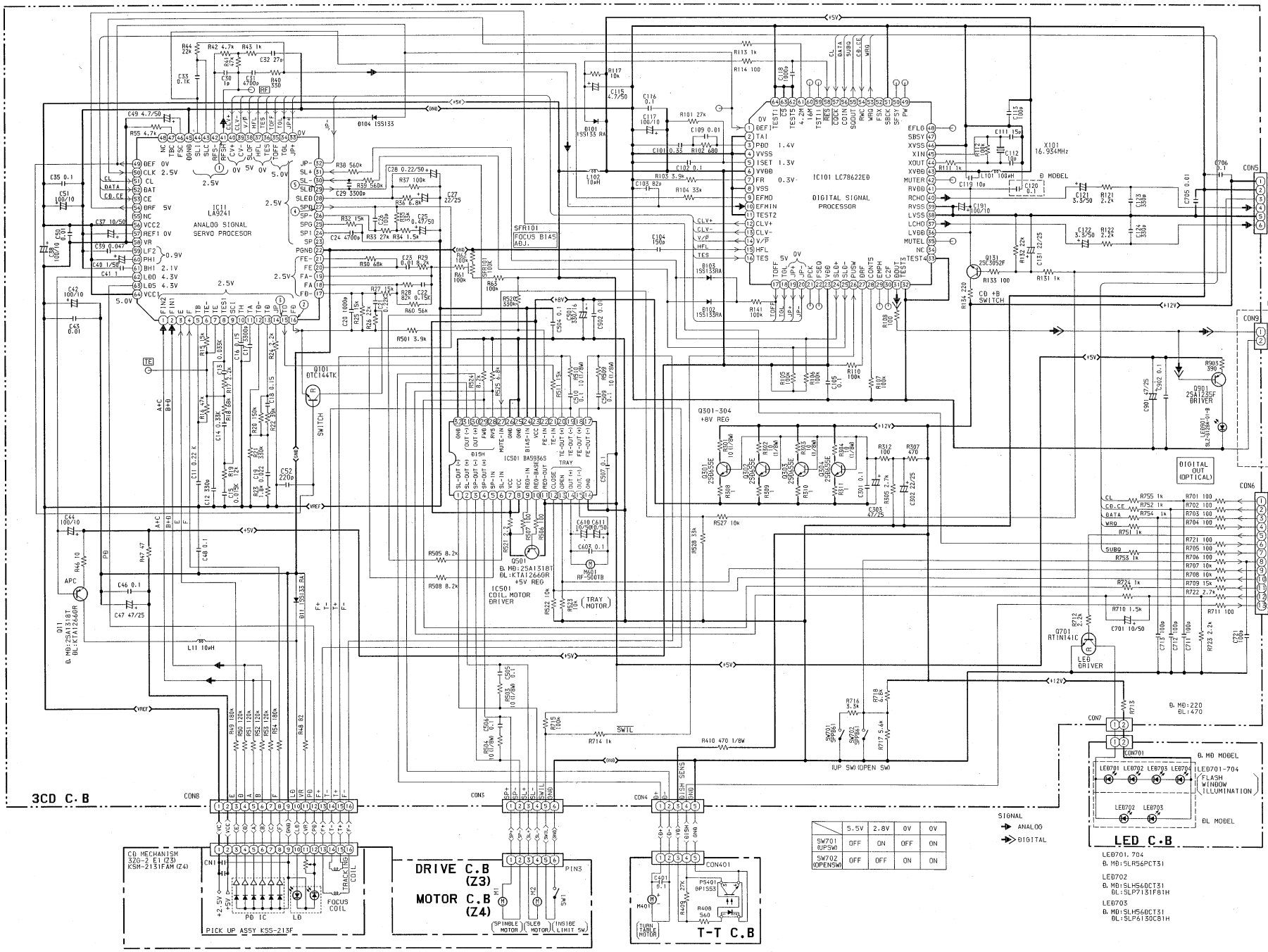
⑤ IC11 Pin ㉙ (SLD)

VOLT/DIV: 200mV
TIME/DIV: 2S



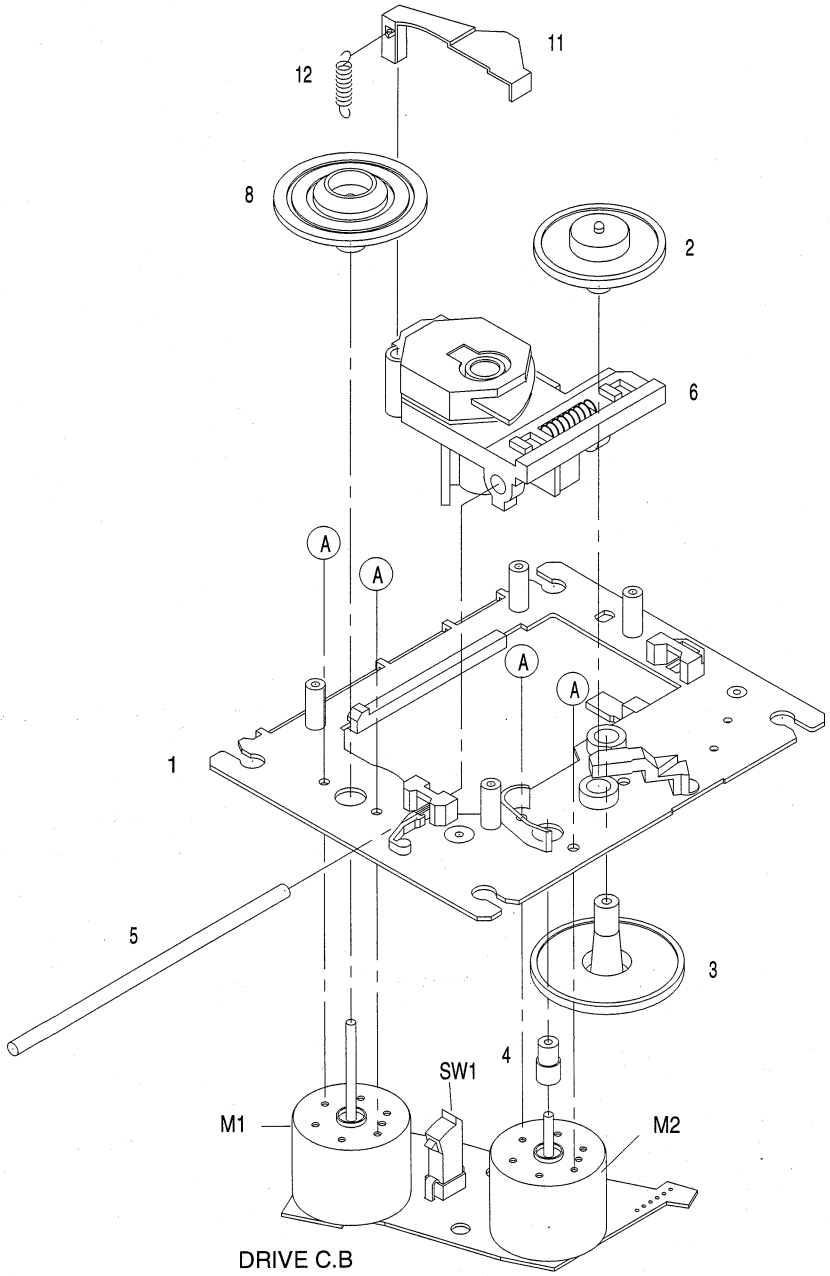

MECHANISM ASSY
3ZG-2 E1 (Z3)
KSM-2131FAM (Z4)
3CD C.B
MD MODEL
CON9
TO MAIN UNIT
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
PD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213F
CON8
Q11 LD DRIVER
SFR101
FOCUS BIAS ADJ.
IC11 LA9241ML CD ASP, SERVO
IC101 LC78622ED CD DSP
Q131 CD +B SWITCH
TO/FROM MAIN UNIT
CON5
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
LED C.B
CON701
CON7
LED704
LED703
LED702
LED701
EXCEPT DL
Q701 LED SW
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
MOTOR C.B (Z4)
DRIVE C.B (Z3)
Q101 SW
Vref OUT (+2.5V)
Q301 ~ Q304
+8V REG
M601 (TRAY MOTOR)
TRACKING SPINDLE
FOCUS SLED
TRAY DISH
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
CON4
T-T C.B
Q501 +5V REG.
SW701 (UP SW)
SW702 (OPEN SW)
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-DRF
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
DISH-F
DISH-R
SENS
TO/FROM MAIN UNIT


T-T C.B
FC4
CON401
RS401
R409
R408
Q401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
MOTOR C.B
M2
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
SW1
M1
(SPINDLE MOTOR)
M1
<BLK>
<ORG>
BLK
CON3
TO/FROM MAIN UNIT
FC2
FC1
TO/FROM MAIN UNIT
FC3
CN1
FC1
LED C.B
CON701
LED701
LED702
LED703
LED704
(YEL)
(BLK)
LED901
DIGITAL OUT
(OPTICAL)
LED701-704
(FLASH WINDOW LIGHTING)
SW702
SW701
(OPEN)
(UP)
M601
M601
(TRAY LOADING MOTOR)
3CD C.B



	5.5V	2.8V	0V	0V
SW701 (UPSW)	OFF	ON	OFF	ON
SW702 (OPENSW)	OFF	OFF	ON	ON

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E1)

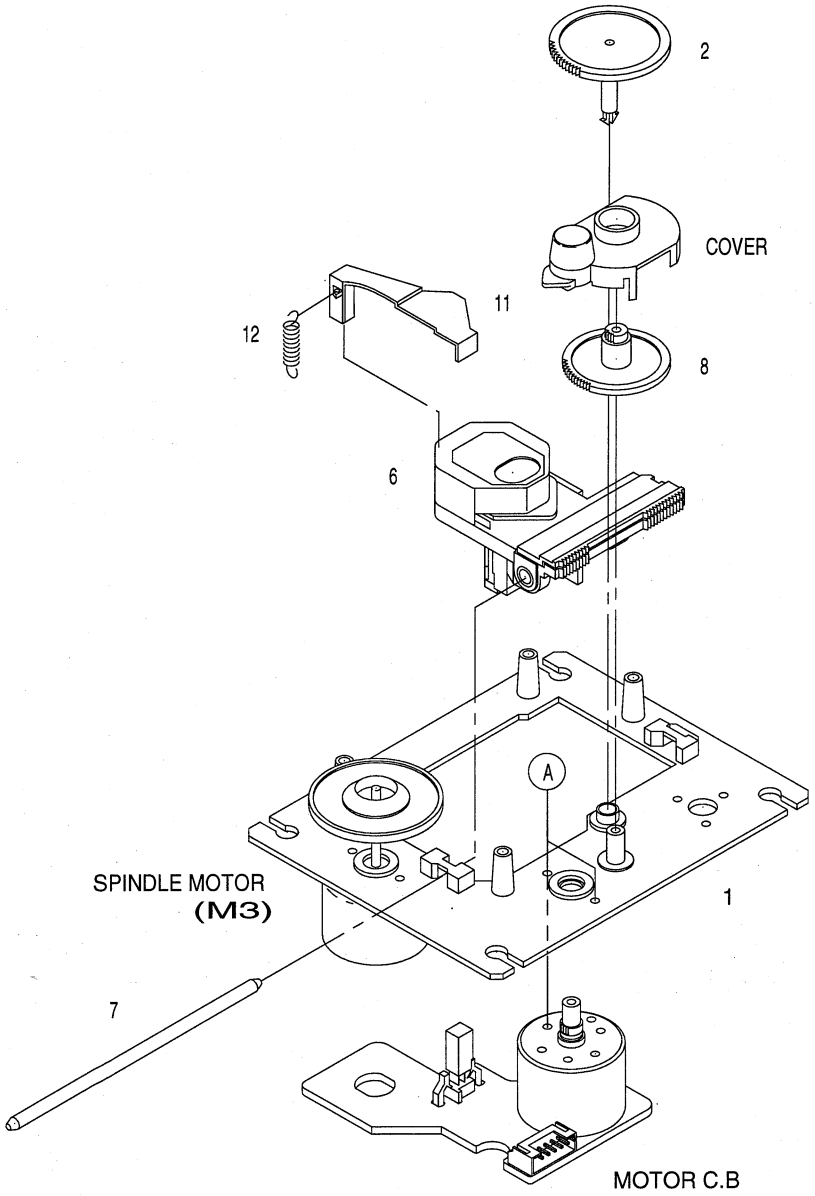


CD MECHANISM PARTS LIST 1/1 (3ZG-2 E1)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-110		CHAS ASSY,SHT
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-240-010		SHAFT,SLIDE 3
6	87-A90-836-010		PICKUP,KSS-213F
8	83-ZG2-233-010		TURN TABLE,A5
11	83-ZG2-245-110		LEVER,SHUTTER
12	83-ZG2-250-010		SPR-E,SHT 2
A	87-261-032-210		SCREW V+2-3

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131 FAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131 FAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-629-220		MOTOR CHASSIS ASSY(MB)(FR)
2	92-626-907-010		GEAR(A)(S)
6	87-A90-836-010		OPTICAL PICK UP KSS-213F
7	92-626-908-020		SHAFT SLED
8	92-627-003-010		GEAR(B)
11	92-646-697-020		LENS SHUTTER(F)
12	92-646-702-010		SPRIG EXTENSION
A	97-621-255-150		SCREW+P2-3

USE MODEL LIST

1. CX-SNS208
2. CX-NS203
3. CX-NS202
4. CX-NS205
5. CX-ZR220
6. CX-ZR222
7. CX-NH33MD
8. CX-SNH33MD
9. CX-SNH35MD
10. CX-SNH37MD
11. CX-SN3000M
12. CX-NS5LH
13. CX-NS307
14. CX-NS303
15. CX-NS306
16. CX-NA303
17. CX-SNS303
18. CX-SNS909

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

アイワ株式会社
AIWA CO.,LTD.

912162

Tokyo Japan

〒110-8710 東京都台東区池之端1-2-11 ☎03（3827）3111（代表）

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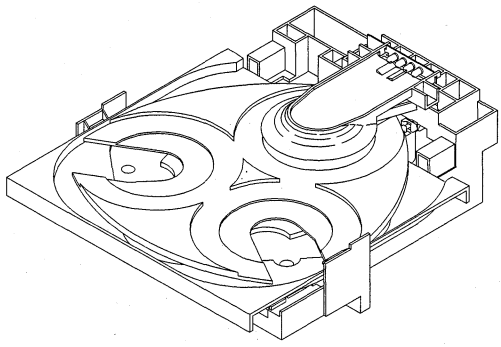
aiwa

aiwa SERVICE

4ZG-1Z3
4ZG-1Z4

SERVICE MANUAL



CD MECHANISM

• BASIC CD MECHANISM: KSM-2131BAM 3ZG-2 E1 KSM-2131FAM

• TYPE: English

SUPPLEMENT

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	R	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	R	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

■ This Service Manual has various derivation.Derivation name is indicated by the Service Manual for each model.

■ This Service Manual contains information about the difference between 4ZG-1Z3/ 4ZG-1Z4. If requiring the other information ,see Service Manual of 4ZG-1Z3/ 4ZG-1Z4 (S/M Code No.09-983-249-3OT)

S/M Code No. 09-983-249-3S2

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1Z3 DSH

SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1Z3 (THE 3rd SANYO IC MODEL)
4ZG-1Z4 (THE 4th SANYO IC MODEL)

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	R	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	R	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

DERIVATION NAME

D: Digital output function
DL: Digital output function (CD WINDOW Flash function LOW END Type)
MD: Digital output for Mini Disc
SH: Pick up equipped with shutter
R: Defference of tray

MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210	0E	PULLY,WORM N
2	81-ZG1-212-010	0E	PULLY,LOAD MO
3	81-ZG1-239-010	0E	S-SCREW,TT
4	81-ZG1-291-110	0E	GEAR,TRAY RELAY NO3
5	81-ZG1-271-010	0E	S-SCREW MECH REAR
6	81-ZG1-277-310	1A	HLDR,MAGNET N
7	81-ZG1-255-110	0E	PLATE,MAGNET MK2
8	83-ZG3-213-010	0E	LVR,SW
9	84-ZG1-008-110	1H	TRAY,NO3
10	87-045-364-010	1F	MOTOR(BCH3B14)
11	84-ZG1-005-210	1H	TURNTABLE,NO1(*)
12	84-ZG1-011-010	1A	REFLECTOR,CD
13	84-ZG1-248-010	0E	SPR-C,WORM
14	84-ZG1-208-210	0E	LEVER,CAM
15	84-ZG1-209-010	0E	BELT,SQ1.8-117.7
16	84-ZG1-211-010	0E	SPR-E CAM S
17	84-ZG1-215-410	1B	GEAR,MAIN CAM BLU
18	84-ZG1-216-310	1A	SLIDE,MECHA CAM YEL
19	84-ZG1-205-110	1A	GEAR,TRAY
20	84-ZG1-206-110	0E	GEAR,RELAY
21	84-ZG1-207-010	0E	PULLEY,RELAY
22	84-ZG1-221-010	1B	GEAR,MAIN TT
23	84-ZG1-238-010	1A	GEAR,WORM N
24	84-ZG1-224-010	0E	LEVER,TT
25	84-ZG1-225-010	0E	BELT,SQ1.0-63.3
26	84-ZG1-268-010	0E	MAGNET,CLAMPER 97<Z4>
26	83-ZG3-602-010	1A	RING,MAG<Z3>
27	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
28	84-ZG1-259-010	0E	SPR-P,WORM
29	84-ZG1-244-310	1A	CABI,OPTICAL
30	84-ZG1-261-010	0E	LID,OPTICAL
A	87-067-703-010	0E	TAPPING SCREW, BVT2+3-10
B	87-251-070-410	0E	U+2.6-3
C	87-067-981-010	0E	BVT2+3-6 BLK

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

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